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Title: FACILITIES TO CONTROL AND MONITOR RADIOACTIVE CONTAMINATION  
IN LABORATORY WASTES; emergent request for

Serial No: 3-KHD-23/A1/N8

Pages: 5

Notes: NRDL

U. S. NAVAL RADIOLOGICAL DEFENSE LABORATORY  
San Francisco 24, California

A1-2  
3-141D-23/A1/N8  
J10:1ps

OCT 2 1956

From: Commanding Officer and Director  
U. S. Naval Radiological Defense Laboratory  
To: Assistant Secretary of the Navy (Material)  
Via: (1) Commander, San Francisco Naval Shipyard  
(2) District Public Works Officer, Twelfth Naval District  
(3) Chief, Bureau of Ships  
(4) Chief, Bureau of Yards and Docks  
(5) Chief of Naval Operations (Shore Station Development Board)  
(6) Comptroller of the Navy

Subj: Facilities to Control and Monitor Radioactive Contamination  
in Laboratory Wastes; emergent request for

Ref: (a) NAVSHIPS 250-770 (Rev 2 Apr 1956)  
(b) NRDL Minor New Construction and Improvement Program  
for FY 1957; submission of, dated 30 Apr 1956

Encl: (1) NAVDOCKS Form 167 Justification  
(2) Report of Engineering Study by Kaiser Engineers, Oakland,  
California, under Contract NBy-4560 of 10 Aug 1956

1. Building 815 is the main laboratory and office building of the U. S. Naval Radiological Defense Laboratory. The Laboratory's normal operations include studies which involve the use of unsealed radioactive isotopes. The present methods of control are manual collection and disposal of radioactive wastes. The building at present does not incorporate any special features to prevent the accidental release of air-borne or liquid-borne wastes.

2. The safety problem involved in the event of accidental release of radioactive material into the Laboratory liquid waste disposal system or into the air from the ventilation system has become of vital importance because, (a) in consonance with a San Francisco Bay pollution abatement program, laboratory sanitary wastes combined with those of SFNS will be diverted into the City of San Francisco system for sewage treatment upon completion of the SFNS sewer construction project now in progress, (b) NRDL is situated in the SFNS and adjacent to a Government Housing Project, and (c) the AEC is in the process of establishing safety regulations regarding radioactive waste disposal, severely limiting radioactive concentrations.

2nd End. 12/22  
D31-204/104  
100-9682  
9/20/52

SFNS 1st end  
142D A1 601961  
2 Nov 56

Buildings 3rd  
end HP/12 (771B)  
Ser 771-870  
24 Oct 57

5th End CNO  
OP-4437/100  
Ser 4437-444  
13 Jan 58

Buildings HP/12 (771B)  
Ser 771-1132  
19 Dec 56

Buildings 4th  
C-311C (job)  
NBY-4560  
87 Nov 57

3-141D-23/A1/18

JIO:lp

OCT 2 1956

Subj: Facilities to Control and Monitor Radioactive Contamination  
in Laboratory Wastes; emergent request for

3. It is proposed to provide a laboratory liquid waste retention and control system and a system to continuously monitor a mixture of all potentially contaminated air which is exhausted from Building 815 as recommended by enclosure (2). Action on a further recommendation of enclosure (2) to provide separate exhaust systems for all fume hoods where unsealed isotopes are used, is deferred until scientific program plans can be made to determine precise needs.
4. Until this project is provided, the Laboratory will have no record of the liquid-borne radioactive contamination that is discharged into the sewer system, nor any record of the air-borne contamination that is discharged into the atmosphere. Such records are vital to the Laboratory for control purposes in event of accidental spills and release of active material.
5. This is a minor new construction and improvement project number C5-57 with first order of importance, estimated cost \$40,200 to be added to the list submitted by reference (b). Enclosure (1) is a detailed submission in compliance with the requirements of reference (a).
6. It is requested that this project be authorized as emergent, and funds in the amount of \$40,200 provided for accomplishment by Public Works contract as soon as possible.

*R. E. Harris*

R. E. HARRIS  
Acting

*BuDocs C-311C  
1 Feb 1957  
5 Feb 58  
2*

U.S. Naval Radiological Defense Laboratory  
PLACE San Francisco 24, California

DATE 2 October 1956

ORDER OF IMPORTANCE: NUMBER 1, Category A

PROJECT NUMBER C5-57

PURPOSE

The purpose is to provide (1) facilities to control radioactive contamination of the laboratory liquid wastes in Building 815, and (2) facilities to monitor all potentially contaminated air which is exhausted from Building 815.

TOTAL ESTIMATED COST : 40,200

FUNDS REQUESTED NOW: AMOUNT : 40,200

DESCRIPTION OF PROJECT AND COMMENT, INCLUDING STATEMENT OF DEGREE OF URGENCY AND NECESSITY:

PROJECT TITLE: Facilities to control and monitor radioactive contamination in lab wastes.

1. Description of Project:

a. Change the existing sanitary sewer piping within and adjacent to Building 815 to segregate the sanitary wastes from the laboratory wastes.

b. Provide a two-tank laboratory liquid waste retention system consisting of 2-15,000 gallon buried concrete tanks, pumps and necessary appurtenances.

c. Provide a continuous monitoring system to monitor a mixture of all potentially contaminated air exhausted from Building 815.

2. Estimate of Cost:

a. Liquid waste segregation and control

	<u>Materials</u>	<u>Labor</u>	<u>Total</u>
2-15,000 gal concrete catch tanks	5,250	5,250	10,500
Duplex Pumps	1,940	300	2,240
Piping and Fittings	4,770	3,820	8,590
Electrical	300	370	670
Fresh water for flushing	260	320	600
Analytical equipment	1,700	-	1,700
Sub-totals	14,240	10,060	24,300

(cont'd)

(Continue on another sheet if necessary)

THIS SPACE RESERVED FOR BUREAU MEMORANDUM

PROJECT MANAGER \_\_\_\_\_

BUREAU ACTION \_\_\_\_\_

Enclosure (1) to NMMA ltr 3-141D-23/A1/NS of 2 October 1956

OCT 2 1956

b. Air Monitoring System

	<u>Materials</u>	<u>Labor</u>	<u>Total</u>
Electrical work	\$ 230	\$ 400	\$ 630
Air monitor	5,780	120	5,900
Fan and motor	310	80	390
Duct work	<u>1,330</u>	<u>610</u>	<u>1,940</u>
Sub-totals	7,650	1,210	8,860

c. A&E costs and administrative allowance 7,000

Grand Total \$40,160

ounded to 40,200

3. Justification:

a. Building 815 is the main laboratory and office building of M&DL. The Laboratory's normal operations include studies which involve the use of unsealed radioactive isotopes. The present methods of control are manual collection and disposal of radioactive wastes. The building at present does not incorporate any special features to prevent the accidental release of air-borne or liquid-borne radioactive waste.

b. In July 1955 the Atomic Energy Commission published in the Federal Register a notice of proposed rules establishing "Standards for Protection Against Radiation" which was intended to apply to holders of licenses issued by the AEC pursuant to the Atomic Energy Act of 1954. Included in the proposed regulations are limits on the radioactive concentration in liquids that are discharged into public sewers and limits on the air-borne radioactive concentration that can be discharged into the atmosphere.

c. Laboratory normal liquid wastes are discharged into the sanitary sewer system which discharges without treatment into the Bay, via the San Francisco Naval Shipyard sanitary sewer system. In consonance with the San Francisco Bay pollution abatement program, a sewer project is now under construction to divert SFNS and Laboratory sewage into the City of San Francisco system for treatment. Completion of the sewer construction project is scheduled for early 1957.

d. An engineering study of the Laboratory radioactive waste problem was performed by Kaiser Engineers, Oakland, California, and recommendations were:

(1) Provide complete segregation of the Laboratory liquid wastes from the sanitary wastes, and provide a two-tank liquid retention system for the Laboratory wastes, which will permit monitoring and radiochemical analysis before disposal. This method permits recovery of radioactive

OCT 2 1956

materials which do not meet safety requirements for the public sewer system. The recovered radioactive wastes can then be disposed of safely by other means.

(2) Provide separate exhaust systems with special high quality filters for all fume hoods in which unsealed radioactive materials are handled.

(3) Provide continuous monitoring for all potentially contaminated air which is exhausted from Building 815.

e. The Laboratory is in the process of studying present and future scientific program plans with the view of limiting the number of fume hoods in which unsealed isotope experiments will be conducted, to a controlled few. Therefore, action on recommendation 2-2 stated above will be deferred until plans are properly formulated. Action on the remaining two recommendations is considered important enough to justify this emergency project.

f. If this project is not approved the Laboratory will be in the unfavorable position of having no record of the amount of radioactive contamination that is discharged into the sewer or into the atmosphere. The Laboratory will be without legal defense if radiation injury occurs and will not be able to show compliance with AEC safety regulations.

g. Estimated time for completion after receipt of funds - 6 months. Accomplishment will be by Public Works contract.

h. This is a new project.

i. No additional manpower requirement is anticipated as a result of this project.

#### 4. Certification:

a. This project is essential to the accomplishment of the assigned mission of this laboratory.

b. This project is complete and effective for the purpose intended.

c. This project will provide effective and economical operation.

d. Reasonable research has disclosed that other suitable facilities do not exist.

e. Preliminary plans and engineering studies adequate to afford an accurate cost estimate have been made.

f. This project does not conflict with the proposed location of any other project carried on the Master Shore Station Development Plan, and consideration has been given to the future development in this area.

g. This project is urgently required in the interest of National Defense in accordance with the definition contained in paragraph 4e. of SECNAV Instruction 11013.1B of 2 Nov 1955.